**Precalculus**

**Notes 4.7**

1. **Inverse Sine Function**

Review: If a function has an inverse, then it must pass the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ test.

Examples: Which functions have inverses?

Review: When finding an inverse, interchange and and solve for

Example: Find the inverse of

Now, consider the Transcendental Trig functions. Since they are periodic functions, the horizontal line technique does NOT work. We must restrict their domains to get inverse functions.

Consider,

By restricting the domain to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ we can have an inverse sine function.

Given:

Inverse: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now how do we solve for ?

We will use special notation just like we did for

So, for the Transcendental Trig Function

Remember – You reverse the numbers in an ordered pair when going from a function to its inverse function.

Note:

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Examples: Evaluate remembering D: [-1, 1] and R: [. Don’t Use Calculuator!

\*\*Notes Packet: Inverse Trig Functions\*\*

Now let’s practice using the calculator. \*\*Remember: Domain of is \_\_\_\_\_\_\_ and Range of is \_\_\_\_\_\_\_\_\_\_.

\*\*Remember: Domain of is \_\_\_\_\_\_\_ and Range of is \_\_\_\_\_\_\_\_\_\_.

Compositions of Functions: \*\*Remember: and .\*\*

Inverse Properties:

1. If and then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. If and then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. If and then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Example: Evaluate

Ex. 6: Evaluate

Ex. 7: Write an algebraic expression in